

**Title:** JP10021933A2: ELECTRODE OF SOLID OXIDE FUEL CELL AND ITS FORMING METHOD

**Derwent Title:** Electrolyte of solid state oxide fuel cell - has nickel-YSZ cermet fuel pole whose YSZ content is raised, towards substrate side [\[Derwent Record\]](#)

**Country:** JP Japan

**Kind:** A

**Inventor:** FUJITANI YASUYUKI;

**Assignee:** MITSUBISHI HEAVY IND LTD  
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**Application Number:** JP1996000169247

**IPC Code:** [H01M 4/86](#); [C23C 14/08](#); [C23C 14/22](#); [H01M 4/88](#); [H01M 8/02](#);

**Priority Number:** 1996-06-28 JP1996000169247


**Abstract:** PROBLEM TO BE SOLVED: To provide the electrode of a solid oxide fuel cell which never exfoliates from the electrolyte even if it receives heavy thermal load, and its making method.

SOLUTION: This electrode has such a composition that the content of YSZ increases as it moves toward a substrate 1, by decreasing the deposition speed of a YSZ deposition flow 11a and increasing the deposition speed of an Ni deposition flow 12a gradually, when forming the fuel electrode 2 of the cermet consisting of Ni/YSZ on the surface of the substrate 1, by depositing the deposition flow 11a of YSZ 11 and the deposition flow 12a of Ni12 to the substrate (electrolyte) 1 consisting of YSZ by means of an electron beam depositor 21. On the other hand, when performing the above deposition, the thermal expansion coefficient of the fuel electrode 2 is approximated more to the substrate 1, the more it goes to the side of the substrate 1, and also the coupling force between the interfaces of the substrate 1 and to the fuel electrode 2 is strengthened, by applying an Ar ion beam 13 toward the substrate 1 from an ion gun 22 thereby mixing the surface between the substrate 1 and the fuel electrode 2 from the action of Ar+ large in radius of an atom, when performing the above deposition.

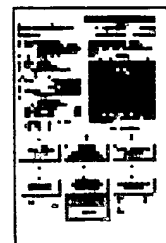
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**Family:** None

**Forward References:** [Go to Result Set: Forward references \(1\)](#)

PDF	Patent	Pub.Date	Inventor	Assignee	Title
	<a href="#">US6080283</a>	2000-06-27	Ray; Robert E.	Eveready Battery Company, Inc.	<a href="#">Plasma treatment for metal oxide electrodes</a>

**Other Abstract Info:** CHEMABS 128(12)143132S CHEMABS 128(12)143132S DERABS C1998-182366 DERABS C1998-182366



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DIALOG(R)File 351:Derwent WPI

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011765456 \*\*Image available\*\* WPI Acc No: 1998-182366/

XRAM Acc No: C98-058575 XRPX Acc No: N98-144231

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**Electrolyte of solid state oxide fuel cell - has nickel-YSZ cermet raised, towards substrate side**

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Patent Assignee: MITSUBISHI JUKOGYO KK (MITO )

Number of Countries: 001 Number of Patents: 001

**Patent Family:**

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 10021933	A	19980123	JP 96169247	A	19960628	199817 B

Priority Applications (No Type Date): JP 96169247 A 19960628

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

JP 10021933 A 4 H01M-004/86

**Abstract (Basic): JP 10021933 A**

The electrode includes YSZ substrate (1) on front face of which Ni/YSZ cermet fuel pole (2) is formed. The content of YSZ in the fuel pole is raised, towards the substrate side.

**ADVANTAGE** - Improves operation efficiency of electrode. Enables to form electrode easily. Prevents reduction of property of electrode.

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Title Terms: ELECTROLYTIC; SOLID; STATE; OXIDE; FUEL; CELL; NICKEL; CERMET; FUEL; POLE; CONTENT; RAISE; SUBSTRATE; SIDE

Derwent Class: L03; X16

International Patent Class (Main): H01M-004/86

International Patent Class (Additional): C23C-014/08; C23C-014/22;

H01M-004/88; H01M-008/02

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Manual Codes (CPI/A-N): L03-E04; L03-E04B

Manual Codes (EPI/S-X): X16-C; X16-E06

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